

RAW SEQUENCE LISTING

**The Biotechnology Systems Branch of the Scientific and Technical
Information Center (STIC) no errors detected.**

Application Serial Number: 10/561,484
Source: IFWP
Date Processed by STIC: 12/29/2005

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IFW?

RAW SEQUENCE LISTING

DATE: 12/29/2005

PATENT APPLICATION: US/10/561,484

TIME: 15:02:22

Input Set : A:\10356-WO.ST25.txt

Output Set: N:\CRF4\12292005\J561484.raw

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3 <110> APPLICANT: Patkar, Shamkant
4     Higgins, Don
5     Fatum, Tine
6     Vind, Jesper
7     Madkor, Sabry
8     Sorensen, Thomas
10 <120> TITLE OF INVENTION: Lipolytic enzyme variants
12 <130> FILE REFERENCE: 10470.204-US
C--> 14 <140> CURRENT APPLICATION NUMBER: US/10/561,484
C--> 14 <141> CURRENT FILING DATE: 2005-12-20
14 <160> NUMBER OF SEQ ID NOS: 14
16 <170> SOFTWARE: PatentIn version 3.3
18 <210> SEQ ID NO: 1
19 <211> LENGTH: 269
20 <212> TYPE: PRT
21 <213> ORGANISM: Thermomyces lanuginosus
23 <400> SEQUENCE: 1
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26 1          5          10          15
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30          20          25          30
33 Asn Ile Thr Cys Thr Gly Asn Ala Cys Pro Glu Val Glu Lys Ala Asp
34          35          40          45
37 Ala Thr Phe Leu Tyr Ser Phe Glu Asp Ser Gly Val Gly Asp Val Thr
38          50          55          60
41 Gly Phe Leu Ala Leu Asp Asn Thr Asn Lys Leu Ile Val Leu Ser Phe
42 65          70          75          80
45 Arg Gly Ser Arg Ser Ile Glu Asn Trp Ile Gly Asn Leu Asn Phe Asp
46          85          90          95
49 Leu Lys Glu Ile Asn Asp Ile Cys Ser Gly Cys Arg Gly His Asp Gly
50          100         105         110
53 Phe Thr Ser Ser Trp Arg Ser Val Ala Asp Thr Leu Arg Gln Lys Val
54          115         120         125
57 Glu Asp Ala Val Arg Glu His Pro Asp Tyr Arg Val Val Phe Thr Gly
58          130         135         140
61 His Ser Leu Gly Gly Ala Leu Ala Thr Val Ala Gly Ala Asp Leu Arg
62 145         150         155         160
65 Gly Asn Gly Tyr Asp Ile Asp Val Phe Ser Tyr Gly Ala Pro Arg Val
66          165         170         175
69 Gly Asn Arg Ala Phe Ala Glu Phe Leu Thr Val Gln Thr Gly Gly Thr
70          180         185         190
73 Leu Tyr Arg Ile Thr His Thr Asn Asp Ile Val Pro Arg Leu Pro Pro
74          195         200         205

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77 Arg Glu Phe Gly Tyr Ser His Ser Ser Pro Glu Tyr Trp Ile Lys Ser
78      210                      215                      220
81 Gly Thr Leu Val Pro Val Thr Arg Asn Asp Ile Val Lys Ile Glu Gly
82 225                      230                      235                      240
85 Ile Asp Ala Thr Gly Gly Asn Asn Gln Pro Asn Ile Pro Asp Ile Pro
86      245                      250                      255
89 Ala His Leu Trp Tyr Phe Gly Leu Ile Gly Thr Cys Leu
90      260                      265
93 <210> SEQ ID NO: 2
94 <211> LENGTH: 286
95 <212> TYPE: PRT
96 <213> ORGANISM: Fusarium oxysporum
98 <400> SEQUENCE: 2
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101 1      5      10      15
104 Gln His Gly Ala Ala Ala Tyr Cys Asn Ser Glu Ala Ala Ala Gly Ser
105      20      25      30
108 Lys Ile Thr Cys Ser Asn Asn Gly Cys Pro Thr Val Gln Gly Asn Gly
109      35      40      45
112 Ala Thr Ile Val Thr Ser Phe Val Gly Ser Lys Thr Gly Ile Gly Gly
113      50      55      60
116 Tyr Val Ala Thr Asp Ser Ala Arg Lys Glu Ile Val Val Ser Phe Arg
117 65      70      75      80
120 Gly Ser Ile Asn Ile Arg Asn Trp Leu Thr Asn Leu Asp Phe Gly Gln
121      85      90      95
124 Glu Asp Cys Ser Leu Val Ser Gly Cys Gly Val His Ser Gly Phe Gln
125      100     105     110
128 Arg Ala Trp Asn Glu Ile Ser Ser Gln Ala Thr Ala Ala Val Ala Ser
129      115     120     125
132 Ala Arg Lys Ala Asn Pro Ser Phe Asn Val Ile Ser Thr Gly His Ser
133      130     135     140
136 Leu Gly Gly Ala Val Ala Val Leu Ala Ala Ala Asn Leu Arg Val Gly
137 145      150     155     160
140 Gly Thr Pro Val Asp Ile Tyr Thr Tyr Gly Ser Pro Arg Val Gly Asn
141      165     170     175
144 Ala Gln Leu Ser Ala Phe Val Ser Asn Gln Ala Gly Gly Glu Tyr Arg
145      180     185     190
148 Val Thr His Ala Asp Asp Pro Val Pro Arg Leu Pro Pro Leu Ile Phe
149      195     200     205
152 Gly Tyr Arg His Thr Thr Pro Glu Phe Trp Leu Ser Gly Gly Gly Gly
153      210     215     220
156 Asp Lys Val Asp Tyr Thr Ile Ser Asp Val Lys Val Cys Glu Gly Ala
157 225      230     235     240
160 Ala Asn Leu Gly Cys Asn Gly Gly Thr Leu Gly Leu Asp Ile Ala Ala
161      245     250     255
164 His Leu His Tyr Phe Gln Ala Thr Asp Ala Cys Asn Ala Gly Gly Phe
165      260     265     270
168 Ser Trp Arg Arg Tyr Arg Ser Ala Glu Ser Val Asp Lys Arg
169      275     280     285

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172 <210> SEQ ID NO: 3
173 <211> LENGTH: 265
174 <212> TYPE: PRT
175 <213> ORGANISM: Absidia reflexa
177 <400> SEQUENCE: 3
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180 1 5 10 15
183 Lys Ala His Thr Phe Tyr Thr Ala Leu Ser Ala Asn Ala Tyr Cys Arg
184 20 25 30
187 Thr Val Ile Pro Gly Gly Arg Trp Ser Cys Pro His Cys Gly Val Ala
188 35 40 45
191 Ser Asn Leu Gln Ile Thr Lys Thr Phe Ser Thr Leu Ile Thr Asp Thr
192 50 55 60
195 Asn Val Leu Val Ala Val Gly Glu Lys Glu Lys Thr Ile Tyr Val Val
196 65 70 75 80
199 Phe Arg Gly Thr Ser Ser Ile Arg Asn Ala Ile Ala Asp Ile Val Phe
200 85 90 95
203 Val Pro Val Asn Tyr Pro Pro Val Asn Gly Ala Lys Val His Lys Gly
204 100 105 110
207 Phe Leu Asp Ser Tyr Asn Glu Val Gln Asp Lys Leu Val Ala Glu Val
208 115 120 125
211 Lys Ala Gln Leu Asp Arg His Pro Gly Tyr Lys Ile Val Val Thr Gly
212 130 135 140
215 His Ser Leu Gly Gly Ala Thr Ala Val Leu Ser Ala Leu Asp Leu Tyr
216 145 150 155 160
219 His His Gly His Ala Asn Ile Glu Ile Tyr Thr Gln Gly Gln Pro Arg
220 165 170 175
223 Ile Gly Thr Pro Ala Phe Ala Asn Tyr Val Ile Gly Thr Lys Ile Pro
224 180 185 190
227 Tyr Gln Arg Leu Val His Glu Arg Asp Ile Val Pro His Leu Pro Pro
228 195 200 205
231 Gly Ala Phe Gly Phe Leu His Ala Gly Glu Glu Phe Trp Ile Met Lys
232 210 215 220
235 Asp Ser Ser Leu Arg Val Cys Pro Asn Gly Ile Glu Thr Asp Asn Cys
236 225 230 235 240
239 Ser Asn Ser Ile Val Pro Phe Thr Ser Val Ile Asp His Leu Ser Tyr
240 245 250 255
243 Leu Asp Met Asn Thr Gly Leu Cys Leu
244 260 265
247 <210> SEQ ID NO: 4
248 <211> LENGTH: 264
249 <212> TYPE: PRT
250 <213> ORGANISM: Absidia corymbifera
252 <400> SEQUENCE: 4
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255 1 5 10 15
258 Ala His Thr Phe Tyr Thr Ala Leu Ser Ala Asn Ala Tyr Cys Arg Thr
259 20 25 30
262 Val Ile Pro Gly Gly Gln Trp Ser Cys Pro His Cys Asp Val Ala Pro

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263          35          40          45
266 Asn Leu Asn Ile Thr Lys Thr Phe Thr Thr Leu Ile Thr Asp Thr Asn
267          50          55          60
270 Val Leu Val Ala Val Gly Glu Asn Glu Lys Thr Ile Tyr Val Val Phe
271 65          70          75          80
274 Arg Gly Thr Ser Ser Ile Arg Asn Ala Ile Ala Asp Ile Val Phe Val
275          85          90          95
278 Pro Val Asn Tyr Pro Pro Val Asn Gly Ala Lys Val His Lys Gly Phe
279          100         105         110
282 Leu Asp Ser Tyr Asn Glu Val Gln Asp Lys Leu Val Ala Glu Val Lys
283          115         120         125
286 Ala Gln Leu Asp Arg His Pro Gly Tyr Lys Ile Val Val Thr Gly His
287          130         135         140
290 Ser Leu Gly Gly Ala Thr Ala Val Leu Ser Ala Leu Asp Leu Tyr His
291 145          150         155         160
294 His Gly His Asp Asn Ile Glu Ile Tyr Thr Gln Gly Gln Pro Arg Ile
295          165         170         175
298 Gly Thr Pro Glu Phe Ala Asn Tyr Val Ile Gly Thr Lys Ile Pro Tyr
299          180         185         190
302 Gln Arg Leu Val Asn Glu Arg Asp Ile Val Pro His Leu Pro Pro Gly
303          195         200         205
306 Ala Phe Gly Phe Leu His Ala Gly Glu Glu Phe Trp Ile Met Lys Asp
307          210         215         220
310 Ser Ser Leu Arg Val Cys Pro Asn Gly Ile Glu Thr Asp Asn Cys Ser
311 225          230         235         240
314 Asn Ser Ile Val Pro Phe Thr Ser Val Ile Asp His Leu Ser Tyr Leu
315          245         250         255
318 Asp Met Asn Thr Gly Leu Cys Leu
319          260
322 <210> SEQ ID NO: 5
323 <211> LENGTH: 269
324 <212> TYPE: PRT
325 <213> ORGANISM: Rhizomucor miehei
327 <400> SEQUENCE: 5
329 Ser Ile Asp Gly Gly Ile Arg Ala Ala Thr Ser Gln Glu Ile Asn Glu
330 1          5          10          15
333 Leu Thr Tyr Tyr Thr Thr Leu Ser Ala Asn Ser Tyr Cys Arg Thr Val
334          20          25          30
337 Ile Pro Gly Ala Thr Trp Asp Cys Ile His Cys Asp Ala Thr Glu Asp
338          35          40          45
341 Leu Lys Ile Ile Lys Thr Trp Ser Thr Leu Ile Tyr Asp Thr Asn Ala
342          50          55          60
345 Met Val Ala Arg Gly Asp Ser Glu Lys Thr Ile Tyr Ile Val Phe Arg
346 65          70          75          80
349 Gly Ser Ser Ser Ile Arg Asn Trp Ile Ala Asp Leu Thr Phe Val Pro
350          85          90          95
353 Val Ser Tyr Pro Pro Val Ser Gly Thr Lys Val His Lys Gly Phe Leu
354          100         105         110
357 Asp Ser Tyr Gly Glu Val Gln Asn Glu Leu Val Ala Thr Val Leu Asp

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358          115          120          125
361 Gln Phe Lys Gln Tyr Pro Ser Tyr Lys Val Ala Val Thr Gly His Ser
362          130          135          140
365 Leu Gly Gly Ala Thr Ala Leu Leu Cys Ala Leu Asp Leu Tyr Gln Arg
366 145          150          155          160
369 Glu Glu Gly Leu Ser Ser Ser Asn Leu Phe Leu Tyr Thr Gln Gly Gln
370          165          170          175
373 Pro Arg Val Gly Asp Pro Ala Phe Ala Asn Tyr Val Val Ser Thr Gly
374          180          185          190
377 Ile Pro Tyr Arg Arg Thr Val Asn Glu Arg Asp Ile Val Pro His Leu
378          195          200          205
381 Pro Pro Ala Ala Phe Gly Phe Leu His Ala Gly Glu Glu Tyr Trp Ile
382          210          215          220
385 Thr Asp Asn Ser Pro Glu Thr Val Gln Val Cys Thr Ser Asp Leu Glu
386 225          230          235          240
389 Thr Ser Asp Cys Ser Asn Ser Ile Val Pro Phe Thr Ser Val Leu Asp
390          245          250          255
393 His Leu Ser Tyr Phe Gly Ile Asn Thr Gly Leu Cys Thr
394          260          265
397 <210> SEQ ID NO: 6
398 <211> LENGTH: 271
399 <212> TYPE: PRT
400 <213> ORGANISM: Rhizopus oryzae
402 <400> SEQUENCE: 6
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408 Gln Glu Phe Thr Lys Tyr Ala Gly Ile Ala Ala Thr Ala Tyr Cys Arg
409          20          25          30
412 Ser Val Val Pro Gly Asn Lys Trp Asp Cys Val Gln Cys Gln Lys Trp
413          35          40          45
416 Val Pro Asp Gly Lys Ile Ile Thr Thr Phe Thr Ser Leu Leu Ser Asp
417          50          55          60
420 Thr Asn Gly Tyr Val Leu Arg Ser Asp Lys Gln Lys Thr Ile Tyr Leu
421 65          70          75          80
424 Val Phe Arg Gly Thr Asn Ser Phe Arg Ser Ala Ile Thr Asp Ile Val
425          85          90          95
428 Phe Asn Phe Ser Asp Tyr Lys Pro Val Lys Gly Ala Lys Val His Ala
429          100          105          110
432 Gly Phe Leu Ser Ser Tyr Glu Gln Val Val Asn Asp Tyr Phe Pro Val
433          115          120          125
436 Val Gln Glu Gln Leu Thr Ala His Pro Thr Tyr Lys Val Ile Val Thr
437          130          135          140
440 Gly His Ser Leu Gly Gly Ala Gln Ala Leu Leu Ala Gly Met Asp Leu
441 145          150          155          160
444 Tyr Gln Arg Glu Pro Arg Leu Ser Pro Lys Asn Leu Ser Ile Phe Thr
445          165          170          175
448 Val Gly Gly Pro Arg Val Gly Asn Pro Thr Phe Ala Tyr Tyr Val Glu
449          180          185          190
452 Ser Thr Gly Ile Pro Phe Gln Arg Thr Val His Lys Arg Asp Ile Val

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VERIFICATION SUMMARY

PATENT APPLICATION: US/10/561,484

DATE: 12/29/2005

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Input Set : A:\10356-WO.ST25.txt

Output Set: N:\CRF4\12292005\J561484.raw

L:14 M:270 C: Current Application Number differs, Replaced Current Application No

L:14 M:271 C: Current Filing Date differs, Replaced Current Filing Date